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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,607	02/27/2002	Kazuhiko Hayashi	15333	7070
23389	7590	05/04/2005	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC			LEWIS, MONICA	
400 GARDEN CITY PLAZA			ART UNIT	
SUITE 300			PAPER NUMBER	
GARDEN CITY, NY 11530			2822	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/085,607	Applicant(s) HAYASHI ET AL.	
	Examiner Monica Lewis	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the response filed January 31, 2005.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Aylott et al. (U.S. Patent No. 6,331,438).

In regards to claim 1, Nippon discloses the following:

a) the light emitting element including a lower electrode (11), a light emitting material layer (12) including at least a light emitting layer, and an upper electrode (14) having light transparency, which are formed on a substrate (10) in the named order, one of said lower electrode and said upper electrode acting as a cathode, and the other acting as an anode (For Example: See Figure 2).

In regards to claim 1, Nippon fails to disclose the following:

a) light sensor being formed on said upper electrode of said light emitting element.

However, Aylott et al. ("Aylott") discloses a light sensor (37) on an upper electrode (For Example: See Figure 4 and Column 8 Lines 60-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor on an upper electrode as disclosed in Aylott because it aids in providing analysis of analytes in real time (For Example: See Column 2 Lines 15-22).

Additionally, since Nippon and Aylott are both from the same field of endeavor method the purpose disclosed by Aylott would have been recognized in the pertinent art of Nippon.

In regards to claim 3, Nippon discloses the following:

a) light emitting element is an electro-luminescence element (For Example: See Specification Page 4 Lines 9-27).

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6. Claim 4 is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Aylott et al. (U.S. Patent No. 6,331,438) and Nikaido et al. (U.S. Patent No. 5,105,238).

In regards to claim 4, Nippon fails to disclose the following:

a) electroluminescence element includes an organic thin film as said light emitting layer included in said light emitting material layer, said organic thin film has a structure emitting the light in response to an applied current.

However, Nikaido et al. ("Nikaido") discloses an electroluminescence element that includes an organic thin film, said organic thin film has a structure emitting the light in response to an applied current (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include an electroluminescence element that includes an organic thin film as disclosed in Nikaido because it aids in providing reducing the fluctuation of the intensity of the light (For Example: See Abstract).

Additionally, since Nippon and Nikaido are both from the same field of endeavor method the purpose disclosed by Nikaido would have been recognized in the pertinent art of Nippon.

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Aylott et al. (U.S. Patent No. 6,331,438), Nikaido et al. (U.S. Patent No. 5,105,238) and Terao et al. (U.S. Patent No. 6,133,581).

In regards to claim 5, Nippon fails to disclose the following:

a) a hole injection and transport layer is provided between said light emitting layer and said anode.

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However, Terao et al. ("Terao") discloses a hole injection and transport layer (3h) provided between said light emitting layer (3r) and said other of said lower electrode and said upper electrode acting as the anode (For Example: See Figure 3 and Column 1 Lines 17-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a hole injection and transport layer provided between said light emitting layer and said lower electrode and said upper electrode as disclosed in Terao because it aids in providing low power consumption (For Example: See Abstract).

Additionally, since Nippon and Terao are both from the same field of endeavor method the purpose disclosed by Terao would have been recognized in the pertinent art of Nippon.

In regards to claim 6, Nippon fails to disclose the following:

a) a hole injection and transport layer is provided between said light emitting layer and said cathode.

However, Terao discloses a hole injection and transport layer provided between said light emitting layer and said other of said lower electrode and said upper electrode acting as the cathode (For Example: See Figure 17b and Column 1 Lines 17-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a hole injection and transport layer provided between said light emitting layer and said lower electrode and said upper electrode as disclosed in Terao because it aids in providing low power consumption (For Example: See Abstract).

Additionally, since Nippon and Terao are both from the same field of endeavor method the purpose disclosed by Terao would have been recognized in the pertinent art of Nippon.

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8. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Aylott et al. (U.S. Patent No. 6,331,438), Nikaido et al. (U.S. Patent No. 5,105,238), Terao et al. (U.S. Patent No. 6,133,581) and Mori et al. (Japanese Publication No. 361134084).

In regards to claim 7, Nippon fails to disclose the following:

a) light sensor includes a pn junction formed by a region formed of a p-type semiconductor and another region formed of an n-type semiconductor.

However, Mori discloses a light sensor that includes a pn junction (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor includes a pn junction as disclosed in Mori because it aids in providing miniaturization (For Example: See Abstract).

Additionally, since Nippon and Mori are both from the same field of endeavor method the purpose disclosed by Mori would have been recognized in the pertinent art of Nippon.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as obvious over Nippon (Japanese Publication No. 590055487) in view of Aylott et al. (U.S. Patent No. 6,331,438), Nikaido et al. (U.S. Patent No. 5,105,238) and Terao et al. (U.S. Patent No. 6,133,581) and Hamakawa et al. (U.S. Patent No. 4,820,915).

In regards to claim 8, Nippon fails to disclose the following:

a) light sensor includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions.

However, Hamakawa et al. ("Hamakawa") discloses a light sensor that includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an

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n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions (For Example: See Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor that includes a pin structure formed by a region formed of a p-type semiconductor, another region formed of an n-type semiconductor, and an intrinsic semiconductor sandwiched between those two regions as disclosed in Hamakawa because it aids in providing the ability to separate color components (For Example: See Column 1 Lines 40-57).

Additionally, since Nippon and Hamakawa are both from the same field of endeavor method the purpose disclosed by Hamakawa would have been recognized in the pertinent art of Nippon.

Response to Arguments

10. Applicant's arguments filed 1/31/05 have been fully considered but they are not persuasive. First, Applicant argues that "Aylott fails to teach or suggest placing the light sensor on an electrode, let alone an upper electrode." However, Aylott discloses a light sensor (37) on an upper electrode (For Example: See Figure 4 and Column 8 Lines 60-63). Aylott discloses that "EL 35 is emitted from layer 31 through a transparent anode (not shown) and substrate 34 into a photoluminescent probe or sensor layer 37" (For Example: See Column 8 Lines 60-64).

American Heritage defines "on" as being used to indicate a position above and supported by. The light sensor is located above the upper electrode and is supported by it (For Example: See Figure 4). Therefore, the light sensor is "on" an upper electrode.

Finally, Applicant argues "there is no motivation for one of ordinary skill in the art to combine the teachings of Nippon and Aylott. The disclosure of Nippon is directed to an

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electroluminescent display element. The sensor in Nippon is capable of detecting the luminance of the light emitted from the element so as to change the drive voltage. In contrast, Aylott is directed to detecting biological, chemical and physical analytes. This is useful in such fields as medical, biochemical, analytical chemistry, occupational safety, microelectronic, environmental, military and forensic applications...A more descriptive listing of the uses, provided at column 3 line 26 to column 4 line 10, contains no description or suggestion of using the configuration in Aylott in electroluminescent display element. Rather, safety appears to be the primary aim of the device described in Aylott.” In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Nippon and Aylott are both directed to electroluminescent devices. Additionally, Aylott discloses that the detection and quantification of analytes are of prime interest in a variety of areas including microelectronics (For Example: See Column 1 Lines 20-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Nippon to include a light sensor on an upper electrode as disclosed in Aylott because it aids in providing analysis of analytes in real time (For Example: See Column 2 Lines 15-22).

Conclusion

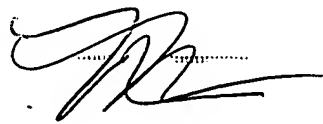
11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

April 29, 2005



Mary Wilczewski
Primary Examiner